What Is Claimed Is:

1. A method for inducing humoral and cellular immune responses in a mammal against a tumor that expresses a tumor associated antigen (TAA) or against a disease caused by an infectious agent, said method comprising the steps of:

(a) administering a first vaccine to the mammal, wherein said first vaccine comprises an antibody component that binds with the TAA or with an antigen associated with the infectious agent, and wherein said antibody component is conjugated with a soluble immunogenic carrier protein; and

(b) administering a second vaccine to said mammal, wherein said second vaccine comprises an anti-idiotype antibody component that mimics an epitope of said TAA or said infectious agent antigen, and wherein said anti-idiotype antibody component is conjugated with a soluble immunogenic carrier protein.

2. The method of claim 1, wherein said antibody component of step (a) is selected from the group consisting of:

(a) a murine monoclonal antibody;

(b) a humanized antibody derived from a murine monoclonal antibody;

(c) a human monoclonal antibody; and

(d) an antibody fragment derived from (a), (b) or (c).

3. The method of claim 2, wherein said antibody fragment is selected from the group consisting of $F(ab')_2$, $F(ab)_2$, Fab', Fab, Fv, sFv and minimal recognition unit.

4. The method of claim 1, wherein said anti-idiotype antibody component is selected from the group consisting of:

(a) a polyclonal antibody;

(b) a murine monoclonal antibody;

(c) a humanized antibody derived from (b);

(d) a human monoclonal antibody;

(e) a subhuman primate antibody; and

(f) an antibody fragment derived from (a), (b), (c), (d) or (e).

5. The method of claim 4, wherein said antibody fragment is selected from the group consisting of $F(ab')_2$, $F(ab)_2$, Fab', Fab, Fv, sFv and minimal recognition unit.

6. The method of claim 1, wherein said method further comprises the step of:

(c) administering interferon-γ prior to and during said administration of said second vaccine.

7. The method of claim 1, wherein said method further comprises the step of:

(c) administering interleukin-2 prior to and during said administration of said second vaccine.

8. The method of claim 1, wherein said method further comprises the step of:

(c) administering interleukin-2 and interferon-γ prior to and during said administration of said second vaccine.

9. A method for inducing humoral and cellular immune responses in a mammal against a tumor that expresses a TAA or against a disease caused by an infectious agent, said method comprising the steps of:

(a) administering a vaccine to the mammal, wherein said vaccine comprises an antibody component

that binds with the TAA or with an antigen associated with the infectious agent, and wherein said antibody component is conjugated with a soluble immunogenic carrier protein; and

(b) administering an antibody or antigen-binding fragment thereof, wherein said antibody or fragment is not conjugated with a soluble immunogenic carrier protein, and wherein said antibody or fragment binds with the TAA or with an antigen associated with the infectious agent.

10. The method of claim 9, wherein said antibody or antibody fragment of step (b) is conjugated with biotin, and wherein said method further comprises the step of:

(c) administering avidin to decrease circulating levels of said biotinylated antibody or said biotinylated antibody fragment.

11. The method of claim 10, wherein said method further comprises the step of:

(d) administering said vaccine of step (a) a second time.

12. The method of claim 11, wherein said method further comprises the step of:

(e) administering interferon-γ prior to and during said second administration of said vaccine.

13. The method of claim 11, wherein said method further comprises the step of:

(e) administering interleukin-2 prior to and during said second administration of said vaccine.

14. The method of claim 11, wherein said m thod further comprises the step of:

(e) administering interleukin-2 and interferon-γ prior to and during said second administration of said vaccine.

15. A method for inducing humoral and cellular immune responses in a patient against a tumor that expresses a TAA or against a disease caused by an infectious agent, said method comprising the steps of:

(a) obtaining T cells from the patient;

(b) introducing an expression vector into said T cells to obtain transfected T cells, wherein said expression vector comprises a DNA molecule encoding either a chimeric immunoglobulin/T cell receptor or a chimeric immunoglobulin/CD3 protein, and wherein said immunoglobulin-encoding portion of said DNA molecule encodes the variable region of an antibody that binds with the TAA or with an antigen associated with the infectious agent;

(c) stimulating the proliferation of said transfected T cells to obtain an increased mass of transfected T cells; and

(d) returning said increased mass of transfected T cells to the patient.

16. The method of claim 15, wherein said method further comprises the steps of:

(e) administering at least one cytokine selected from the group consisting of interferon-γ and interleukin-2, after returning said transfected T cells to said patient; and

(f) administering a vaccine to said patient, wherein said vaccine comprises an anti-idiotype antibody component that binds with the immunoglobulin moiety of said chimeric immunoglobulin/T cell receptor or said chimeric immunoglobulin/CD3 protein, and wherein said

anti-idiotype antibody component is conjugated with a soluble immunogenic carrier protein.

17. The method of claim 15, wherein said method further comprises the step of:

(e) administering a vaccine to said patient, wherein said vaccine comprises an anti-idiotype antibody component that binds with the immunoglobulin moiety of said chimeric immunoglobulin/T cell receptor or said chimeric immunoglobulin/CD3 protein, and wherein said anti-idiotype antibody component is conjugated with a soluble immunogenic carrier protein.

18. A method for inducing humoral and cellular immune responses in a patient against a tumor that expresses a TAA or against a disease caused by an infectious agent, said method comprising the steps of:

(a) obtaining T cells from the patient;

(b) introducing an expression vector into said T cells to obtain transfected T cells, wherein said expression vector comprises a DNA molecule encoding either a chimeric immunoglobulin/T cell receptor or a chimeric immunoglobulin/CD3 protein, and wherein said immunoglobulin-encoding portion of said DNA molecule encodes the variable region of an antibody that mimics an epitope of the TAA or an epitope of an antigen associated with the infectious agent;

(c) stimulating the proliferation of said transfected T cells to obtain an increased mass of transfected T cells; and

(d) returning said increased mass of transfected T cells to the patient.

19. The method of claim 18, wherein said method further comprises the steps of:

(e) administering at least one cytokine selected from the group consisting of interferon-γ and interleukin-2, after returning said transfected T cells to said patient; and

(f) administering a vaccine to said patient, wherein said vaccine comprises an antibody component that binds with the immunoglobulin moiety of said chimeric immunoglobulin/T cell receptor or said chimeric immunoglobulin/CD3 protein, and wherein said antibody component is conjugated with a soluble immunogenic carrier protein.

20. The method of claim 18, wherein said method further comprises the step of:

(e) administering a vaccine to said patient, wherein said vaccine comprises an antibody component that binds with the immunoglobulin moiety of said chimeric immunoglobulin/T cell receptor or said chimeric immunoglobulin/CD3 protein, and wherein said antibody component is conjugated with a soluble immunogenic carrier protein.

21. A vaccine for treating a patient having a tumor that expresses carcinoembryonic antigen (CEA), comprising a pharmaceutically acceptable carrier and therapeutically effective amount of an anti-CEA antibody component which is conjugated with a soluble immunogenic carrier protein.

22. The vaccine of claim 21, wherein said anti-CEA antibody component is selected from the group consisting of:

(a) a murine monoclonal Class III anti-CEA antibody;

(b) a humanized antibody derived from a murine monoclonal Class III anti-CEA antibody;

(c) a human monoclonal anti-CEA antibody; and

(d) an antibody fragment derived from (a), (b) or (c).

23. The vaccine of claim 22, wherein said antibody fragment is selected from the group consisting of $F(ab')_2$, $F(ab)_2$, Fab', Fab, Fv, sFv and minimal recognition unit.

24. A vaccine for treating a patient having a tumor that expresses CEA, comprising a pharmaceutically acceptable carrier and therapeutically effective amount of an anti-idiotype antibody component which is conjugated with a soluble immunogenic carrier protein, wherein said anti-idiotype antibody component mimics an epitope of CEA.

25. The vaccine of claim 24, wherein said anti-idiotype antibody component is selected from the group consisting of:

(a) a polyclonal antibody that binds with the variable region of a Class III anti-CEA antibody;

(b) a monoclonal antibody that binds with the variable region of a Class III anti-CEA antibody;

(c) a humanized antibody derived from (b);

(d) a subhuman primate antibody that binds with the variable region of a Class III anti-CEA antibody;

(e) a human monoclonal anti-CEA antibody that binds with the variable region of a Class III anti-CEA antibody; and

(f) an antibody fragment derived from (a), (b), (c), (d) or (e).

26. The vaccine of claim 25, wherein said antibody fragment is selected from the group consisting of

$F(ab')_2$, $F(ab)_2$, Fab', Fab, Fv, sFv and minimal recognition unit.

27. A method for inducing humoral and cellular immune responses in a mammal against a tumor that expresses a TAA or against a disease caused by an infectious agent, said method comprising the steps of:

(a) administering a first vaccine to the mammal, wherein said first vaccine comprises an antibody that binds with the TAA or with an antigen associated with the infectious agent, and wherein said antibody component is conjugated with a soluble immunogenic carrier protein;

(b) administering an antibody or antigen-binding fragment thereof, wherein said antibody or fragment is not conjugated with a soluble immunogenic carrier protein, and wherein said antibody or fragment binds with the TAA or with an antigen associated with the infectious agent; and

(c) administering a second vaccine to said mammal, wherein said second vaccine comprises an anti-idiotype antibody that mimics an epitope of said TAA or said infectious agent antigen, and wherein said anti-idiotype antibody component is conjugated with a soluble immunogenic carrier protein.

28. The method of claim 27, wherein said first vaccine comprises a Class III anti-CEA antibody, wherein said antibody of step (b) is a Class III anti-CEA antibody, and wherein said second vaccine comprises an antibody that binds with the variable region of a Class III anti-CEA antibody.

29. A method for tr ating a patient having a tumor that expresses CEA, said method comprising the step of

administering bispecific antibody to the patient, wherein said bispecific antibody comprises a moi ty that binds with CD3 protein and a moiety that binds with CEA, and wherein said CEA-binding moiety is derived from a Class III anti-CEA antibody.